HEAVY LOSS OF SUGAR STOPPED

Chemists Perfect Process of Protecting Raw Product From Mold and Bacteria.

PREY ON SWEETENING FACTOR

At Least \$1,500,000 Worth of Sugar Destroyed Yearly by Tiny, Greedy Organisms-70,000,000 Pounds la Estimate.

Chicago, Ill.-More sugar will be available for everybody through the discovery of a process of keeping it from being injured by molds and buc-

Fully one per cent of the Cuban sugar a year and worth at least \$1,500,by the tiny, greedy organisms which compete with the sweet tooth of mankind. As the per capita consumption of sugar in the United States is approximately \$1.84 pounds annually the amount hitherto consumed by the 873,000 persons for a twelve month This would keep the sugar bowls of a large city full. Counting molds and bacteria. each family as five persons, 175,000 of supply which has been wasted by the invisible hordes.

Mr. Nicholas Kopeloff and Mrs. Lillian Kopeloff, bacteriologist and asalstant bacteriologist at the Louisiana sugar experiment station in New Orteans, and members of the American Chemical society, have just completed a bulletin on the method of preventing the molds and bacteria from wresting sweet solace of the beet and cane from mortals.

Loses Sweetness.

Sugar loses its sweetness because molds consume the sucrose, which is its sweetening factor. Although the smount thus lost may be only a frac tion of one per cent, and far too slight to be detected by the senses of taste or smell in many cases, it is easily determined by the polariscope, an instrument especially designed for measuring the amount of sucrose pres When sugar deteriorates not only does the polariscope detect the differences, but anyone who is sufficiently observant will note that it will actually take a larger spoonful to give the same sweetening power. Thus, if a barrel of raw sugar should be kept through the summer months and it is infected with harmful micro-organisma, it might be necessary to use an extra half-spoonful at the end of the power that could be obtained before deterioration took place. As all sugar is sold strictly on the polariscopic basis, even small losses aggregate huge

The usual source of these molds is tion. Each individual moid, if it falls dergoes such losses by deterioration in transportation or storage, mainly due to the absorption of moisture by sugar in damp weather or humid climatea

For example, sugars made in Cuba are stored in the hold of a vessel, often with insufficient ventilation, which causes them to "sweat." Wifile coming from a tropical climate into there is a difference in voltage becooler water the moisture condenses tiso occurs when sugar is stored for of this difference. By making matheany length of time, especially at high matical calculations based on this difcomperature, as in refinerles, where

mainder is held in storage for varying periods, as dictated by business needs,

Can Be Prevented.

Having identified the injurious micro-organisms, Doctor and Mrs. Kopeloff developed a method by which the quality of a given sugar might be determined in this respect. By simply consulting a chart after a preliminary analysis, one may now find out whether or not a given sugar will deteriorate or lose its sweetness in storage. The sugars which are masafe to keep may be melted up first, the sounder sugars being held in storage with

Doctor and Mrs. Kopeloff, by making bacteriological examinations at every stage of the sugar-making process, have found that sugar deterioracrop, or about 70,000,000 pounds of tion can be prevented by substituting dry or super-heated steam for water 900, it is estimated, has been destroyed in the final process of washing sugar in the drums in which sugar is dried, These centrifugals, as they are called, In their whirling suck up air from the floor which may be contaminated with germs. Also, it is common practice to make the color of the sugar lighter by washing the crystals with water, which may be contaminated with

In the new process, it is shown that such groups could be kept sweet tem- dry steam is successful in killing over pered during this period from the 99 per cent of these avid molds and bacteria

> gars is not a new one, the results are half to two pounds each. The young shown to have a direct practical value rooster also fills a mother's role by in eliminating losses which have been calling the chicks when he uncovers a considerable factor in the American

He Wouldn't Stop Work for Wedding.

Detroit.-Devotion to duty prevented Nicholas Alexander, cook, from taking an hour off to get married.

His fiancee, Isabelle M. Sahaycaw, applied at the county clerk's office for a marriage Hcense and, in response to the clerk's question as to why the bridegroom-to-be had not come, she said Nicholas was too busy.

She said further that they had agreed to marry a year ago, but they had a quarrel and Nichohas tore up the license he had taken out.

After long and mature deliberation Isabelle came to the conclusion that she had been wrong and that if she did not admit it she ran a good chance of losing Nicholas forever.

She went to him in a penitent mood and found him receptive, but on one point he was adamant. He would not leave his work for a minute to get married, and if she wanted to become his wife she had to take out the marriage license, engage a minister and bring him to the kitchen where the ceremony was to be performed. They were

Rooster Just Like Mother.

Winsted, Conn.-A yearling Rhode Island Red rooster owned by Elmer Robbins is brooding a number of While the practice of steaming su-chickens that weigh from one and a At night the chickens huddle beneath his wings.

RADIO GUIDES

Finders of Naval Stations On celving. Shore Give Angle, Mathematics Does Rest.

WAR NECESSITY MOTHERED IT

Navigator Who Wishes to Know His Latitude and Longitude Sends Out Wireless Message and Listening Stations Give Bearings.

are losing their terrors for naval men, the sun was obscured. The radio disummer to get the same sweetening in the not very distint past a ship rection finder in its most modern form that could navigate when the sun was was the result. It is now proving its hidden became the subject of wild sea- great usefulness in time of peace. faring tales, but the radio direction finder has eliminated many of the per- our stations to find out where they ils due to the absence of the sun. To- are," said a naval officer. "I should day a navigator who wishes to know say that for one warship that calls for the air, which contains millions of mi- his intitude and longitude has only to its bearings there are ten privately cro-organisms at rest and in circula- send the following wireless message: "This is the (ship's name). Where am finding stations are really becoming on an object which can supply it with I?" And the data supplied by the public service institutions. sufficient food, such as sugar, can re- various listening stations will give him produce 300,000 more individuals of his bearings. The wheless direction ing stations at the entrance of almost the same species in less than a weak, finder is not a new device-finders all of the large commercial ports in This reproduction, however, can only were patented as long ago as 1907- the country. There are several statake place in the presence of sufficient, but war developments have emphamoisture, otherwise the organisms lie sized the value of the Instrument for Montank Point, Fire Island, Sandy dormant. Came sugar primarily un- general navigation, says a writer in Hook and Far Rockaway. On clear the New York Evening Post.

It consists of a loop of wire atset up a current in the two sides of the astray. of the coil equally there is no difference in voltage. But when the waves strike the coll in such a manner that tween the two sides of the coil the reon the surface of the sugar. This celving machines indicate the extent ference it is possible to determine the some is melted up at once and the re- direction of the ship which is sending

in relation to the port which is re-

In order to locate the ship's position exactly the data from at least two receiving stations must be compared and it is desirable that another station send its data to check the accuracy of the finding.

War Necessity Mothered It.

Especial attention was paid to the development of the radio direction finder during the war when many fighting ships found that fog was almost on a par with submarines as a naval Experts thereupon experimented to discover a certain method New York.-Fogs, clouds and storms of giving a ship her "reckening" when

"Merchantmen are constantly using owned vessels. Our radio direction-

tions near New York harbor, including days the men on duty at these posts have more or less of "sinecures," but tached to receiving machines. When on a foggy day they are constantly at messages are being received the waves work directing ships which have gone All the listening stations loop. If the waves strike both sides transmit their information to headquarters and headquarters tells the skipper where he is.

Some elderly naval men were skeptical about the radio direction finder when the navy department first introduced the device, but one experience with the instrument usually suffices to convince them of its worth. Recently a new destroyer left Norfolk, Va., bound for Newport, R. I .- ordinarily no great feat of navigation. However, the compass was new and untried, and the captain and the navigating officer prayed for clear weather,

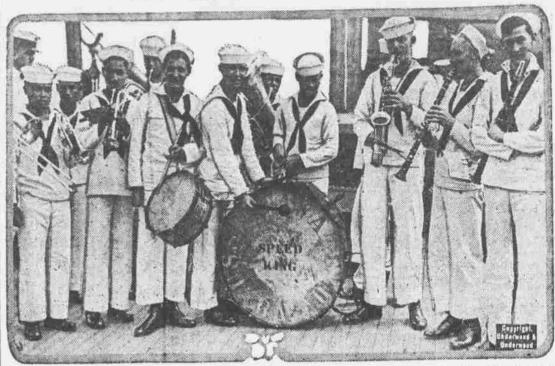
It Beats an Erratic Compass. Despite their prayers they ran into a heavy fog, and from the time they left Cape Henry until they sighted the reef lightship at the entrance to Newport they could see nothing. Nevertheless, the run was made without mishap, owing to the directions sent out by the finding stations, and on landing the officers, who had been skentical, were converts. It was discovered later that the magnetic compass, by which they would have steered under the old methods might have brought them to grief, for it showed an error of more than ten degrees.

"We are handicapped in extending this work," remarked the naval officer, "by lack of personnel. In fact, we've been compelled to close up one or two stations recently owing to a shortage of men. But eventually we hope to have a station at practically every moderately large port-and that I think, will cause making port in fogs to be considered a very ordinary and not at all dangerous achievement,"

Just Two Feet to Death.

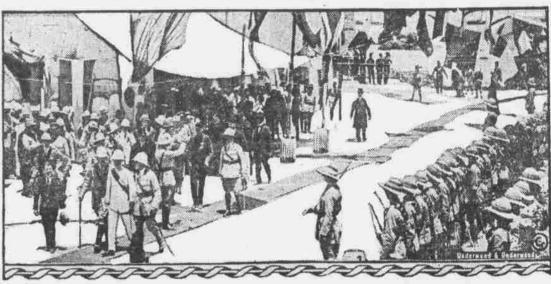
Bowling Green, Ky.-Two feet separated Robert Fulton, of well driller, from death. His employers, a Cincinnati concern, had given up hopes of striking oil and ordered abandonment of the "dry" well. "We'll go two feet turther," Fulton said. At the second foot oil was struck, and in the fire which followed Fulton was burned to

Jazz Kings of the Atlantic Fleet



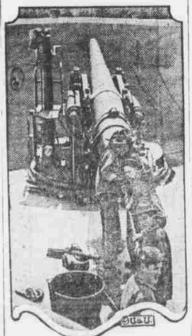
These members of the band of the battleship Delaware have made a reputation as the "jazz kings" of the

Palestine Receives Its High Commissioner



The governors of Jaffa and Jerusalem escorting Sir Herbert Samuel, the new British high commissioner of Palestine, on his arrival at Jaffa.

LOADING FOR A SALUTE



Loading a 6-inch rifle at Fishers' island, just a few seconds before it fired a salute in honor of the Atlantic

TENNIS CHAMPION



William T. Tilden II of Philadelphia, who defeated William M. Johnston of San Francisco in the finals of the national tennis championship tournament at Forest Hills, L. I. Tilden won the world chatapionship at Wimbledon, England this summer. He is now undisputed champion of the world.

Another Use for Hands. Blondine-1 understand Gerty Gldde gad gave Bennie Beanbrough the mit-

Brunetta-I am surprised. "Why?"

"I saw them holding hands the other evening."

"That was the trouble." "Doesn't Gertie like to hold hands?" "Yes, but she likes a man who lets go long enough to dig down into his pockets once in a while,"

Just Going Home, Not to a Fire



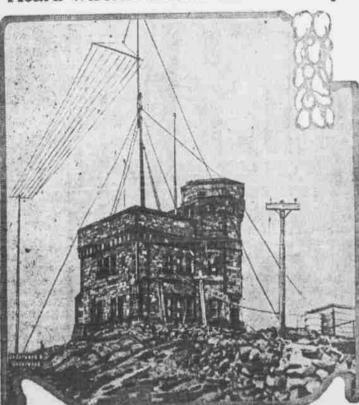
Because of the street car strike in New York the workers who live in Brooklyn borough are having a hard time getting back to their homes after work. These girls, who are employed in the municipal building, Manhattan, commandeered a fire hose truck to take them home after work. They avoided the rush and had a comfortable ride.

Last Photo of the Former Czar



This is the last photograph made of the late exar of Russia and shows him at Ekaterinburg, Siberia, sawing wood with Yankel Yurofsky, command-ant of the reds guarding the captured royal family. The czar was murdered about a week after this photograph was made, and Yurofaky is charged with responsibility for the slaughter of the royal family.

Heard Wireless Phone Talk in Europe



This is the wireless telephone station on Signal Hill, St. Johns, N. F., it which operators recently heard a wireless phone conversation that was being